Docket No.: 2870-0177P

## **AMENDMENTS TO THE CLAIMS**

1. (Currently Amended) A photothermographic material comprising a non-photosensitive silver salt of a long-chained aliphatic carboxylic acid having 15-28 carbon atoms, a photosensitive silver halide, a bisphenol reducing agent for silver ions and a binder on one surface of a support, which comprises

at least one compound represented by the following formula (I)

Formula (I) 
$$(X)_{k}(L)_{m}(A-B)_{n}$$

wherein, in the above formula, X represents a silver halide adsorption group or light absorption group which contains at least one atom of N, S, P, Se or Te, L represents a (k + n)-valent bridging group containing at least one <u>nitrogen atom atom of C, N, S or O</u>, A represents an electron-donating group, B represents a leaving group <u>containing a -COO- group or a hydrogen atom</u>, A-B is dissociated or deprotonated after oxidation to generate a radical A', k represents 0-3, m represents 0 or 1, and n represents 1 or 2, provided that when k = 0 and n = 1, m = 0; and at least one second compound represented by the following formula (1), (2) or (3)

wherein:

in the formula (1),  $R^1$ ,  $R^2$  and  $R^3$  each independently represents a hydrogen atom or a substituent, Z represents an electron withdrawing group, and  $R^1$  and Z,  $R^2$  and  $R^3$ ,  $R^1$  and  $R^2$ , or  $R^3$  and Z may be combined with each other to form a ring structure,

in the formula (2), R4 represents a substituent, and

in the formula (3), X and Y each independently represent a hydrogen atom or a substituent, A and B each independently represents an alkoxy group, an alkylthio group, an alkylamino group, an aryloxy group, an arylthio group, an anilino group, a heterocyclyloxy group, a heterocyclylamino group, and X and Y or A and B may be combined with each other to form a ring structure,

said second compound satisfying at least one of characteristics (i) to (iii):

- (i) compounds producing imagewise a chemical species that can form development initiation points on and in the vicinity of the non-photosensitive silver salt of an organic acid,
- (ii) compounds that provide increase of developed silver grain density to a level of 200-5000% when added in an amount of 0.01 mol/mol of silver, and
- (iii) compounds that provide increase of covering power to a level of 120-1000% when added in an amount of 0.01 mol/mol of silver.
- 2. (Previously Presented) A photothermographic material according to Claim 1, which comprises at least one second compound satisfying characteristic (i).
- 3. (Previously Presented) A photothermographic material according to Claim 1, which comprises at least one second compound satisfying characteristic (ii).

- 4. (Previously Presented) A photothermographic material according to Claim 3, wherein said second compound satisfying characteristic (ii) provides increase of developed silver grain density to a level of 500-3000% when it is added in an amount of 0.01 mol/mol of silver.
- 5. (Previously Presented) A photothermographic material according to Claim 1, which comprises at least one second compound satisfying characteristic (iii).
- 6. (Previously Presented) A photothermographic material according to Claim 5, wherein said second compound satisfying characteristic (iii) provides increase of covering power to a level of 150-500% when it is added in an amount of 0.01 mol/mol of silver.

## 7. (Cancelled)

- 8. (Original) A photothermographic material according to Claim 1, which comprises the compound represented by the formula (I) in an image-forming layer containing the photosensitive silver halide.
- 9. (Original) A photothermographic material according to Claim 1, which comprises the compound represented by the formula (I) in an amount of  $1 \times 10^{-9}$  to  $5 \times 10^{-2}$  mol per mole of silver halide.

- 10. (Original) A photothermographic material according to Claim 1, which comprises the compound represented by the formula (I) in an amount of  $1 \times 10^{-8}$  to  $2 \times 10^{-3}$  mol per mole of silver halide.
- 11. (Previously Presented) A photothermographic material according to Claim 1, which comprises said at least one second compound in an image forming layer comprising said photosensitive silver halide or a layer adjacent thereto.
- 12. (Previously Presented) A photothermographic material according to Claim 1, which comprises said at least one second compound in an amount of  $1 \times 10^{-6}$  to 1 mol per mole of silver halide.
- 13. (Previously Presented) A photothermographic material according to Claim 1, which comprises said at least one second compound in an amount of  $1 \times 10^{-5}$  to  $5 \times 10^{-1}$  mol per mole of silver halide.
- 14. (Previously Presented) A photothermographic material according to Claim 1, which comprises said at least one second compound in an amount of  $2 \times 10^{-5}$  to  $2 \times 10^{-1}$  mol per mole of silver halide.

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- 15. (Currently Amended) A photographic photothermographic material according to claim 1, which comprises at least one second compound satisfying at least characteristics (ii) and (iii).
- 16. (Currently Amended) A photographic photothermographic material according to claim 1, wherein said silver salt of said long-chained aliphatic carboxylic acid having 15-28 carbon atoms is silver behenate.
- 17. (Currently Amended) A photographic photothermographic material according to claim 1, wherein said bisphenol reducing agent is selected from the group consisting of bis(2-hydroxy-3-t-butyl-5-methylphenyl)methane, 2,2-bis(4-hydroxy-3-methyl-phenyl)propane, 4,4-ethylidene-bis(2-t-butyl-6-methylphenol), 1,1-bis(2-hydroxy-3,5-dimethylphenyl)-3,5,5-trimethylhexane and 2,2-bis(3,5-dimethyl-4-hydroxyphenyl)propane.
- 18. (New) The photothermographic material according to claim 1, wherein said photosensitive silver halide has a core/shell structure and the core contains at least two metal complexes in which the metal or the metals included in the metal complexes are selected from the group consisting of rhodium, rhenium, ruthenium, osmium and iridium.
- 19. (New) The photothermographic material according to claim 18, wherein said metal complexes are selected from the group consisting of (NH<sub>4</sub>)<sub>3</sub>Rh(H<sub>2</sub>O)Cl<sub>5</sub>, K<sub>2</sub>Ru(NO)Cl<sub>5</sub>, K<sub>3</sub>IrCl<sub>6</sub> and K<sub>4</sub>Fe(CN)<sub>6</sub>.

- 20. (New) The photothermographic material according to claim 18, wherein said shell contains at least one metal complex in which the metal included in the metal complex is selected from the group consisting of rhodium, rhenium, ruthenium, osmium and iridium.
- 21. (New) A photothermographic material comprising a non-photosensitive silver salt of a long-chained aliphatic carboxylic acid having 15-28 carbon atoms, a photosensitive silver halide, a bisphenol reducing agent for silver ions and a binder on one surface of a support, which comprises

at least one compound represented by the following formula (I)

Formula (I) 
$$\left(X \frac{1}{k} \left(L\right)_{m} \left(A-B\right)_{n}\right)$$

wherein, in the above formula, X represents a silver halide adsorption group or light absorption group which contains at least one atom of N, S, P, Se or Te, L represents a (k + n)-valent bridging group containing at least one atom of C, N, S or O, A represents an electron-donating group, B represents a leaving group or a hydrogen atom, A-B is dissociated or deprotonated after oxidation to generate a radical A', k represents 0-3, m represents 0 or 1, and n represents 1 or 2, provided that when k = 0 and n = 1, m = 0; and

at least one second compound represented by the following formula (1), (2) or (3)

wherein:

in the formula (1),  $R^1$ ,  $R^2$  and  $R^3$  each independently represents a hydrogen atom or a substituent, Z represents an electron withdrawing group, and  $R^1$  and Z,  $R^2$  and  $R^3$ ,  $R^1$  and  $R^2$ , or  $R^3$  and Z may be combined with each other to form a ring structure,

in the formula (2), R4 represents a substituent, and

in the formula (3), X and Y each independently represent a hydrogen atom or a substituent, A and B each independently represents an alkoxy group, an alkylthio group, an alkylamino group, an aryloxy group, an arylthio group, an anilino group, a heterocyclyloxy group, a heterocyclylthio group or a heterocyclylamino group, and X and Y or A and B may be combined with each other to form a ring structure,

said second compound satisfying at least one of characteristics (i) to (iii):

- (i) compounds producing imagewise a chemical species that can form development initiation points on and in the vicinity of the non-photosensitive silver salt of an organic acid,
- (ii) compounds that provide increase of developed silver grain density to a level of 200-5000% when added in an amount of 0.01 mol/mol of silver, and
- (iii) compounds that provide increase of covering power to a level of 120-1000% when added in an amount of 0.01 mol/mol of silver,

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wherein the photothermographic material comprises a Zn metal ion with the non-photosensitive silver salt of the long-chained aliphatic carboxylic acid having 15-28 carbon atoms.

- 22. (New) The photothermographic material according to claim 21, wherein said photosensitive silver halide has a core/shell structure and the core contains at least two metal complexes in which the metal or the metals included in the metal complexes are selected from the group consisting of rhodium, rhenium, ruthenium, osmium and iridium.
- 23. (New) The photothermographic material according to claim 21, wherein said metal complexes are selected from the group consisting of (NH<sub>4</sub>)<sub>3</sub>Rh(H<sub>2</sub>O)Cl<sub>5</sub>, K<sub>2</sub>Ru(NO)Cl<sub>5</sub>, K<sub>3</sub>IrCl<sub>6</sub> and K<sub>4</sub>Fe(CN)<sub>6</sub>.
- 24. (New) The photothermographic material according to claim 21, wherein said shell contains at least one metal complex in which the metal included in the metal complex is selected from the group consisting of rhodium, rhenium, ruthenium, osmium and iridium.
- 25. (New) A photothermographic material comprising a non-photosensitive silver salt of a long-chained aliphatic carboxylic acid having 15-28 carbon atoms, a photosensitive silver halide, a bisphenol reducing agent for silver ions and a binder on one surface of a support, which comprises

at least one compound represented by the following formula (I)

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Formula (I) 
$$\left(X \frac{1}{k} \left(L \frac{1}{m} \left(A-B\right)_{n}\right)\right)$$

wherein, in the above formula, X represents a silver halide adsorption group or light absorption group which contains at least one atom of N, S, P, Se or Te, L represents a (k + n)-valent bridging group containing at least one atom of C, N, S or O, A represents an electron-donating group, B represents a leaving group or a hydrogen atom, A-B is dissociated or deprotonated after oxidation to generate a radical A', k represents 0-3, m represents 0 or 1, and n represents 1 or 2, provided that when k = 0 and n = 1, m = 0; and

at least one second compound represented by the following formula (1), (2) or (3)

wherein:

in the formula (1),  $R^1$ ,  $R^2$  and  $R^3$  each independently represents a hydrogen atom or a substituent, Z represents an electron withdrawing group, and  $R^1$  and Z,  $R^2$  and  $R^3$ ,  $R^1$  and  $R^2$ , or  $R^3$  and Z may be combined with each other to form a ring structure,

in the formula (2), R4 represents a substituent, and

in the formula (3), X and Y each independently represent a hydrogen atom or a substituent,

A and B each independently represents an alkoxy group, an alkylthio group, an alkylamino group,
an aryloxy group, an arylthio group, an anilino group, a heterocyclyloxy group, a heterocyclylthio

group or a heterocyclylamino group, and X and Y or A and B may be combined with each other to form a ring structure,

said second compound satisfying at least one of characteristics (i) to (iii):

- (i) compounds producing imagewise a chemical species that can form development initiation points on and in the vicinity of the non-photosensitive silver salt of an organic acid,
- (ii) compounds that provide increase of developed silver grain density to a level of 200-5000% when added in an amount of 0.01 mol/mol of silver, and
- (iii) compounds that provide increase of covering power to a level of 120-1000% when added in an amount of 0.01 mol/mol of silver,

wherein said photosensitive silver halide has a core/shell structure and the core contains at least two metal complexes in which the metal or metals included in the metal complexes are selected from the group consisting of rhodium, rhenium, ruthenium, osmium and iridium.

- 26. (New) The photothermographic material according to claim 25, wherein said metal complexes are selected from the group consisting of (NH<sub>4</sub>)<sub>3</sub>Rh(H<sub>2</sub>O)Cl<sub>5</sub>, K<sub>2</sub>Ru(NO)Cl<sub>5</sub>, K<sub>3</sub>IrCl<sub>6</sub> and K<sub>4</sub>Fe(CN)<sub>6</sub>.
- 27. (New) The photothermographic material according to claim 25, wherein said shell contains at least one metal complex in which the metal included in the metal complex is selected from the group consisting of rhodium, rhenium, ruthenium, osmium and iridium.